



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Rakib, et al.

Serial No.: 09/755,339

Filed: 1/03/2001

Art. Unit: 2631

Examiner: Unknown

Docket No: TER-002.3P D2

For: APPARATUS AND METHOD FOR SCDMA DIGITAL DATA TRANSMISSION USING  
ORTHOGONAL CODES AND HEAD END MODEM WITH NO TRACKING LOOPS

Honorable Commissioner  
of Patents and Trademarks  
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. §§1.97-1.98, the undersigned would like to make the following prior art references of record in the above-identified patent application. The undersigned believes that some of these references may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 C.F.R. §1.56.

While this Information Disclosure Statement may contain material information pursuant to 37 C.F.R. §1.56, it is not intended to constitute an admission that any individual reference referred to herein is prior art to the invention disclosed and claimed in the above-identified patent application.

Each reference listed herein may be accompanied by an explanation of its relevance. While this explanation is believed to generally reflect the contents of the references which the undersigned believes a reasonable examiner might consider relevant and material to the examination of the above-identified patent application, it is not intended that the examiner rely on the description as unfailingly accurate or complete. A copy of each reference is enclosed for

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the express purpose of providing the examiner with an opportunity to perform an independent evaluation to arrive at an independent assessment of its relevance and materiality, if any, to the claimed subject matter.

#### Cited Art

Kajiwara and Nakagawa, *Spread Spectrum Demodulator Using Block Signal Processing*, IEEE, ICC '91, XP 000269616, pp. 894-898: Teaches a spread spectrum demodulator for cellular systems which uses block signal processing instead of real time demodulation thereby improving efficiency of data transmission by not losing data during acquisition. Block signal processing has been studied in satellite communications, but not in cellular because the multipath problem makes estimating carrier offset in the presence of multipath, interference and collisions with other signals too difficult. Authors propose using a matched filter following a quasi coherent demodulator to process sample data stored in a memory generated by A/D conversion of demodulator output. A digital matched filter feeds matched pulse recursive integrator to make an estimate of the timing offset. The matched filter is envelope detected and the envelope is threshold detected. The data is then processed for frequency and phase offset and the data in memory is then corrected before it is fed to a data decision circuit.


Johansson & Svensson, *Successive Interference Cancellation in Multiple Data Rate DS/CDMA Systems*, IEEE XP 000551625, published 7/25/95, pp. 706-708: Teaches a method for reducing multiple user interference in direct sequence, code division multiple access systems using successive interference cancellation. In this scheme, baseband signal containing the transmissions of multiple users is simultaneously correlated against all the signature code sequences in parallel detectors. Then, the signal of the strongest user is detected first (it is assumed her signal will be the most correctly decoded). This detected strongest signal is then fed back to summation circuits so that it is cancelled out from the baseband signal fed into the correlators. Then, the second strongest signal is detected, and it is cancelled out from the baseband signals fed to the correlators. This process continues for all signals in the order of their power. To compensate for time differences in propagation time, the strongest users 0th and first symbol element are cancelled before the interference cancellation scheme is continued for the second strongest user since the second strongest user's 0th symbol is partly correlated



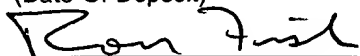
against the strongest user's first symbol element because of different propagation times for these two users.

Dated: February 5, 2002

Respectfully submitted,

  
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I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington D.C. 20231 on February 5, 2002  
(Date Of Deposit)

  
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Ronald Craig Fish, President  
Ronald Craig Fish a Law Corporation  
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**EXAMINER:** Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.